Claims

1. Optical modifier in which signals of one or more wavelength channels are fed into or fed out of transmitting and/or receiving elements including, for example, wave guides, characterised in that at least one coupling device (20) is provided with a curved reflecting surface (8) and a wave-modifying element (19).

2. Optical modifier according to claim 1, characterised in that the coupling device (20) is configured such that a section through the curved surface (8) approximately corresponds to a portion of a parabola (5), hyperbola or ellipse (10).

3. Optical modifier according to claim 1 or 2, characterised in that the coupling device (20) is configured such that the reflecting surface (8) has approximately the shape of a portion of a paraboloid of revolution (5), ellipsoid of revolution (10), or hyperboloid of revolution.

4. Optical modifier according to one of claims 1 to 2, characterised in that at least one transmitting or receiving element is provided, that transmits electromagnetic waves (3, 4) to the reflecting surface (8) of the coupling device (20), or receives electromagnetic waves (3, 4) from the reflecting surface (8) of the coupling device.

5. Optical modifier according to claim 4, characterised in that at least one transmitting or receiving element (9, 11) is arranged in the proximity of a focal point (B) of the reflecting surface (8) of the coupling device.

6. Optical modifier according to claim 4 , characterised in that at least one transmitting or receiving element (9, 11) is a wave guide, preferably a glass fibre.

7. Optical modifier according to one of claims 1 to 2, characterised in that at least one limit stop (7, 12, 13) is provided on the coupling device for calibrating a transmitting or receiving element (9, 11).

8. Optical modifier according to claim 7, characterised in that the limit stop (7, 12, 13) is configured such that it allows calibration of the transmitting and receiving element (9, 11) in

two, preferably in three directions substantially perpendicular to one another.

9. Optical modifier according to claim 7, characterised in that the limit stop (7, 12, 13) is configured integrally with the reflecting surface (8) of the coupling device.

10. Optical modifier according to one of claims 1 to 2, characterised in that at least one input and output are provided, and at least two coupling devices (20) are arranged such that the electromagnetic waves that enter at the input of the optical modifier are firstly reflected at the first coupling device, then pass through the wave-modifying element (19), and lastly are reflected at the second coupling device (20) towards the output.

11. Optical modifier according to one of claims 1 to 2, characterised in that a wave-modifying element (19) is a filter.

12. Optical modifier according to claim 11, characterised in that the wave-modifying element is a frequency band filter that reflects the electromagnetic waves in at least a certain frequency interval.

13. Optical modifier according to claim 11, characterised in that the wave-modifying element is a frequency band filter, which transmits electromagnetic waves with a frequency outside a specific frequency interval.

14. Optical modifier according to claim 12, characterised in that a third coupling device (20) is arranged such that light reflected from the frequency band filter impinges upon the third coupling device.

15. Optical modifier according to claim 14, characterised in that the filter is a neutral density filter, colour filter, a polarising filter or an optical diode or respectively an optical isolator.

16. Optical modifier according to one of claims 1 to 2, characterised in that a wave-modifying element is a switch, preferably an on/off switch, a reflection/transmission switch, or a selection switch.

17. Method for manufacture of an optical modifier according to one of claims 1 to 2, characterised in that the reflecting surface (6) is manufactured as part of a surface of revolution with a cone section as the generating curve of the envelope.

18. Method according to claim 17, characterised in that the part of a surface of revolution is

manufactures by means of turning or milling, and/or polishing.

19. Method according to claim 18, characterised in that in the same clamp in which the reflecting surface is turned or milled, a limit stop surface is turned preferably perpendicular to the axis of rotation of the reflecting surface.

20. Method according to claim 17, characterised in that firstly a negative or respectively a mould tool is fabricated, and the coupling device is manufactured by subsequent moulding.

21. Method according to claim 20, characterised in that on the negative an area is set out such that the moulded positive has at least one further limit stop.

22. Method according to claim 20, characterised in that for moulding, several moulding tools are arranged adjacently so that in one moulding step several coupling devices can be manufactured at the same time.

23. Method according to claim 20, characterised in that for moulding, several moulding tools are arranged adjacently, wherein at least two moulding tools are not arranged parallel to one another.

24. Method according to claim 20, characterised in that a mould part is manufactured that is provided with a carrier (21) and at least one coupling device (20) arranged thereupon.

25. Method according to claim 24, characterised in that spacers (23) are arranged on the carrier (21).

26. Method according to claim 24, characterised in that two mould parts each composed of carriers (21) and at least one coupling device (20) are arranged on two opposite sides of a plate (22), wherein the plate is composed of a material transparent to the transmitted light.

27. Method according to claim 26, characterised in that at least one wave-modifying element (19) is arranged on the plate (22).

28. Method according to claim 17, characterised in that at least two coupling devices (20) are arranged such that the light signal reflected from one coupling device is focussed on the other coupling device, and in that in the beam path between at least two

coupling devices, at least one wave-modifying element is arranged.